

# ABSTRACT

A sub-harmonic generator includes: an input filter operable to receive an input signal containing frequencies from among a first range and to produce a first intermediate signal containing frequencies from among a second range; a signal divider circuit operable to receive the first intermediate signal and to produce a square wave signal containing square wave signal components at fundamental frequencies from among a third range, the third range of frequencies being about one octave below the second range of frequencies; a wave-shaping circuit operable to receive the square wave signal and to produce a second intermediate signal containing sinusoidal signal components from among frequencies corresponding to the respective fundamental frequencies of the square wave signal components; an RMS detector operable to produce an RMS signal corresponding to an instantaneous amplitude of the first intermediate signal; and a voltage controlled amplifier operable to amplify the second intermediate signal by an amount proportional to the RMS signal to produce a sub-harmonic signal.

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